

WTC-8J0

Industrial BOX



V1.1

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Version Change History

Date	Version	Description	Remark
2023/5/15	1.0	First release	Ivy
2023/6/30	1.1	Modify Product model name	

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FCC Class B

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 18 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential environment. This equipment generates, uses and can radiate radio frequency energy. If not installed and used in accordance with this user manual, it may cause harmful interference to radio communications.

Note that even when this equipment is installed and used in accordance with this user manual, there is still no guarantee that interference will not occur. If this equipment is believed to be causing harmful interference to radio or television reception, this can be determined by turning the equipment on and off. If interference is occurring, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and the receiver
- Connect the equipment to a power outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

Warning:

Any changes or modifications made to the equipment which are not expressly approved by the relevant standards authority could void your authority to operate the equipment.

To avoid risk of electric shock, this equipment must only be connected to a supply mains with protective earth.

Do not modify this equipment without authorization of the manufacturer.

Safety Instructions

Intended use

The WTC-8J0 is intended to serve as an industrial monitor which is designed for general purpose for industrial environment.

Intended User profile

The equipment is intended for infant or adults by profession Health care professionals.

Greeting & Setup

Thank you for purchasing the WTC-8J0 unit. We wish that this unit will be durable and reliable in providing your industrial application needs. Please follow the instructions below to ensure the unit continues to have high performance.

Unpacking

After opening the carton, there will be a industrial BOX unit with an accessory box. Examine the contents to see if there are damages to the unit and if all accessories are present.

Setting up

Please read this manual carefully and remember to keep this manual for future reference.

Safety Instructions & Cleaning

The unit has undergone various tests in order to comply with safety standards. Inappropriate use of the open frame unit may be dangerous. Please remember to follow the instructions below to insure your safety during the installation and operating process.

Transporting & Placement of unit

1. When moving the unit on a cart; be very cautious. Quick stops, excessive forces and uneven surfaces may cause the cart to overturn thus risking the unit to fall to the ground.
2. If the industrial BOX unit does fall to the ground, immediately turn the power off and disconnect cords. Then

contact a service technician for repairs. Continual use of the unit may result cause a fire or electric shock. Also, do not repair the unit on your own.

3. Having two or more people transporting the display unit is recommended. In addition, when installing the unit by suspending it also requires two or more people.
4. Before suspending the unit, make sure the material used for suspension is sturdy and stable. If not properly suspended, the display unit may fall and cause serious injury to people standing nearby as well as to the unit itself.
5. If you wish to mount the display unit, remember to use only the mounting hardware recommended by the manufacturer.

Electrical and Power Source Related

1. This industrial BOX unit must operate on a power source as shown on the specification label. If you are not sure what type of power supply used in the area, consult your dealer or local power supplier.
2. The power cords must not be damaged. Applied pressure, added heat, and tugging may damage the power cord.
3. The power cord must be routed properly when setup takes place. We advise that this aspect measure is to prevent people from stepping on the cords or while the unit is suspended to prevent flying objects from getting tangled with the unit.
4. For plug-in equipment, the power outlet socket must be located near the equipment and must be easily accessible.
5. Do not overload the AC outlets or extension cords. Electrical shocks or fires may occur from overloading.
6. Do not touch the power source during a thunderstorm.
7. If your hands are wet, do not touch the plug.
8. Use your thumb and index finger, grip firmly on the power cord to disconnect from the electrical socket. By pulling the power cord, may result in damaging it.

9. If the unit is not going to be in use for an extended period of time, remember to disconnect the unit.
10. The industrial BOX unit uses voltage between 100-240VAC. Connect the unit to a power source with the same numerical value as shown. Please use only the power cord provided by the dealer to ensure safety and EMC compliance.

Various Factors of Environment

1. Do not insert objects into the openings.
2. Do not have liquids seep into the internal areas of the industrial BOX unit.
3. Having liquids seep in or inserting objects into the unit may result in electric shocks from taking and/or short circuiting the internal parts.
4. Do not place the industrial BOX unit in the presence of high moisture areas.
5. Do not install the industrial BOX unit in a wet environment.
6. Do not place near unit near heat generating sources.
7. Do not place the unit in a location where it will come in contact with fumes or steam.
8. Remember to keep the industrial BOX unit away from the presence of dust.
9. If water has flow in or seep in, immediately disconnect the open frame unit. Then contact a service technician for repairs.

Ventilation Spacing

1. Do not cover or block the openings on the top and back sides of the display unit. Inadequate ventilation may cause overheating thus reducing the lifespan of the unit.
2. Unless proper ventilation is present, do not place unit in an enclosed area; such as a built-in shelf. Keep a minimum distance of 10 cm between the display unit and wall.

Operating principle

- A Industrial BOX has four main components: the arithmetic logic unit (ALU), the control unit, the memory, and the input and output devices (collectively termed I/O). These parts are interconnected by buses, often made of groups of wires.
- The control unit, ALU, and registers are collectively known as a central processing unit (CPU).
- Inside each of these parts are thousands to trillions of small electrical circuits which can be turned off or on by means of an electronic switch. Each circuit represents a bit (binary digit) of information so that when the circuit is on it represents a "1", and when off it represents a "0" (in positive logic representation). The circuits are arranged in logic gates so that one or more of the circuits may control the state of one or more of the other circuits.

Cleaning the unit

1. Remember to turn off the power source and to unplug the cord from the outlet before cleaning the unit.
2. Carefully dismount the unit or bring the unit down from suspension to clean.
3. Please use a dry soft cloth to clean the unit.
4. Take a dry cloth and wipe the unit dry. Remember to avoid having liquids seep into the internal components and areas of the industrial BOX unit.

Error message / Troubleshooting

No power	<ol style="list-style-type: none">1. Connect the AC adapter to the computer, and then plug it into an AC outlet.2. Turn on the computer.
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Servicing, Repairing, Maintenance & Safety Checks

1. If the unit is not functioning properly, observe the performance level of the display closely to determine what type of servicing is needed.
2. Do not attempt to repair the industrial BOX unit on your own. Disassembling the cover exposes users' to high voltages and other dangerous conditions. Notify and request a qualified service technician for servicing the unit.
3. To avoid risk of electric shock, this equipment must only be connected to a supply mains with protective earth.
4. If any of the following situations occur turn the power source off and unplug the unit. Then contact a qualified service technician.
 - (a) A liquid was spilled on the unit or objects have fallen into the unit.
 - (b) The unit is soaked with liquids.
 - (c) The unit is dropped or damaged.
 - (d) If smoke or strange odor is flowing out of the operating unit.
 - (e) If the power cord or plug is damaged.
 - (f) When the functions of the unit are dysfunctional.
5. When replacement parts are needed for the industrial BOX unit, make sure service technicians use replacement parts specified by the manufacturer, or those with the same characteristics and performance as the original parts. If unauthorized parts are used it may result in starting a fire, electrical shock and/or other dangers.



EU-wide legislation, as implemented in each Member State, requires that waste electrical and electronic products carrying the mark (left) must be disposed of separately from normal household waste. This includes monitors and electrical accessories, such as signal cables or power cords. When you need to dispose of your display products, please follow the guidance of your local authority, or ask the shop where you purchased the product, or if applicable, follow any agreements made between yourself.

The mark on electrical and electronic products only applies to the current European Union Member States.

Caution:

DO NOT LEAVE THIS EQUIPMENT IN AN UNCONTROLLED ENVIRONMENT WHERE THE STORAGE TEMPERATURE IS BELOW -20° C (-4° F) OR ABOVE 60° C (140° F). THIS MAY DAMAGE THE EQUIPMENT.

This equipment shall not be used in life support systems.

The user is not to touch SIP/SOPs and the patient at the same time.

Caution – Use suitable mounting apparatus to avoid risk of injury.

Caution - Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions. (If battery pack is not used for 1 month, it is recommended to remove the battery pack from equipment.)

The sound pressure level at the operator's position according to IEC 704-1:1982 is no more than 70dB (A).

- A) Grounding reliability can only be achieved when the equipment is connected to an equivalent receptacle marked "Hospital Only" or "Hospital Grade".
- B) Use a power cord that matches the voltage of the power outlet, which has been approved and complies with the safety standard of your particular country.
- C) Caution: This adapter Sinpro LSU120A-108 is a forming part of the industrial device

Contact information:

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Hsinchu, Taiwan 300, R.O.C
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E-Mail: Sales_support@wincomm.com.tw

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Introduction

Product Description

The WTC-8J0 Industrial BOX is based on Intel Elkhart Lake SoC Processor J6412, it accommodates one 2.5" SATA III hard disk drive, one M.2 SATA SSD and up to 32GB DDR4 SODIMM.

The high brightness LCD, Fanless solution, integrated multimedia functions and extensive expansion options make them the perfect platform upon which to build comprehensive lifestyle computing applications.

The WTC-8J0 includes all the features of a powerful computer into a slim and attractive chassis.

The WTC-8J0 is compact, Giga LAN and selectable WLAN network compatible PC with full safety and industrial approval and features to control a dedicated system with a wide variety of applications. Combining the WTC-8J0 into your system can achieve both cost-saving and efficient improvements.

Common applications and Electronic Industrial Record. The WTC-8J0 are definitely your perfect choices.

Package list

Before you begin installing your Industrial Station, please make sure that the following items have been shipped:

- The WTC-8J0 Industrial Box PC unit
- User's manual, chipset drivers
- Power Adapter x 1 (type/model: LSU120A-108)
- Power cord –US type, or other type in UK, EU...etc.

Features

- Intel® Elkhart Lake J6412 BOX
- Low Power Fanless Thermal Solution
- Res or P-Cap Touch with IP69K Design
- Optional Cable Gland for External I.O.
- Special Inspection of 100% Waterproof Guarantee

Specifications

Hardware Specifications

CPU Support	Intel® Intel ElkHart Lake SoC Processor J6412
Disk Drive Space	1 x M.2 (KEY M, 2242/2260/2280) with SATA3 for SSD 1 x SATA3
Expansion	1 x M.2 (KEY E, 2230) with PCIe x1 and shared USB2.0 for Wireless x 1 1 x M.2 (KEY B, 3042/3052)with PCIe x1/USB 3.2/USB2.0 and SIM for 4G/5G SIM socket SIM socket connected to M.2 key B X 1 1 x PCIE,1 x Gen3
I/O Cable gland I/O	USB – 2.0 x 4 COM - RS232/RS422/RS485 x 2 LAN - RJ-45 x 1 (Gigabit Ethernet) Cable Gland USB –2 x USB 3.2 (Gen1), 2 x USB2.0 COM –RS232/RS422/RS485 x 2 (Default is RS232 , RS232/422/485 can be adjusted in BIOS setup utility) LAN –1 x 1 Gigabit LAN, 1 x 2.5 Gigabit LAN Audio - 2 (Line-out, and Mic-in) Video output - HDMI2.0b x 1, VGA x 1

Power Adapter Specifications

Power	Close-frame
MFR	Sinpro
Input Rating	AC 100 ~ 277 V, 47 ~ 63 Hz
Output Rating	DC 24V/5A (MAX 120W)
MTBF	100K hrs operation at 25°C
Classification	Power by Class I certified power adapter. No applied part.
Mode of operation	Continuous operation
System input rating	DC 24V, 5A

Mechanical Specifications

Architecture	SUS304 stainless steel enclosure, chassis type
Color	Sliver
Dimension (WxHxD)	M12 – 363*274*48 (mm) Cable gland – 342*310.7*81 (mm)
Net Weight	M12 – 6kg (w/o power adapter) Cable Gland – 6.5kg (w/o power adapter)
Packing Filler	PE

Environmental Specifications

Temperature	Operating: 0°C to 40°C by HDD 0°C to 50°C by SSD Storage, Transportation: -20°C to 60°C (-4°F ~140°F)
Vibration	Operating: 15g/0.53 oz, 11 ms, half sine wave Non-operating: 50g/1.76 oz, 11 ms, half sine wave
Shock	Operating: 5 ~ 17 Hz , Amplitude : 0.117 ~ 500Hz , Acceleration : 1.0G Non-operating: 10~55Hz/0.15g, 55~500Hz/2.0g
Altitudes	Operational: up to 3000 m (9842 feet) Shipping: up to 12192 m (40000 feet)

Pressure	700 – 1060 hPa (Operation) 186 – 1060 hPa (Storage) 186 – 1060 hPa (Transportation)
EMI / Safety	CE / FCC / VCCI Class A (M12) CE / FCC / VCCI Class B (Cable gland)
IP	IP69K
Noise	Fanless

Getting Started

System Set Up

The following is a summary of the steps in setting up the system for use.

- (1). You can fix the system to a mounting fixture using the screw holes on the sides of the system.
- (2). Make any required external connections such as the display, keyboard, and LAN.
- (3). Plug the appropriate end of the power cord into the power connector on the rear of the system and the plug to an electrical outlet.
- (4). ***Waiting for 3 seconds*** then press the power switch on the front panel of the system once to turn on the system power.
- (5). If necessary, run the BIOS SETUP programs to configure the system.

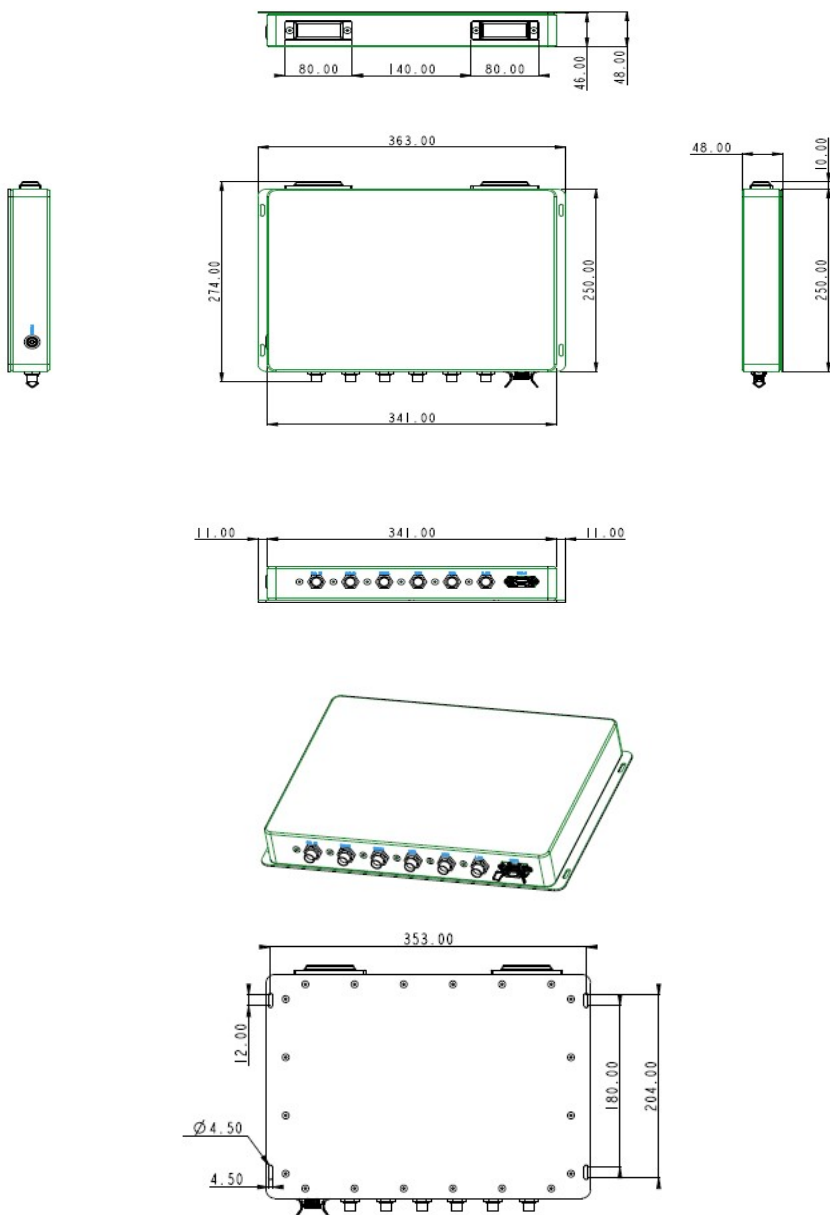
Caution:

In order to boot up system from USB-CD/DVD drive, please connect USB-CD/DVD drive, turn on computer power, keep on pressing "F11" key, go into BIOS quick boot menu, select "USB-CD ROM", WAIT FOR 20 SECONDS, then press enter, system OS will boot up from USB-CD/DVD drive directly.

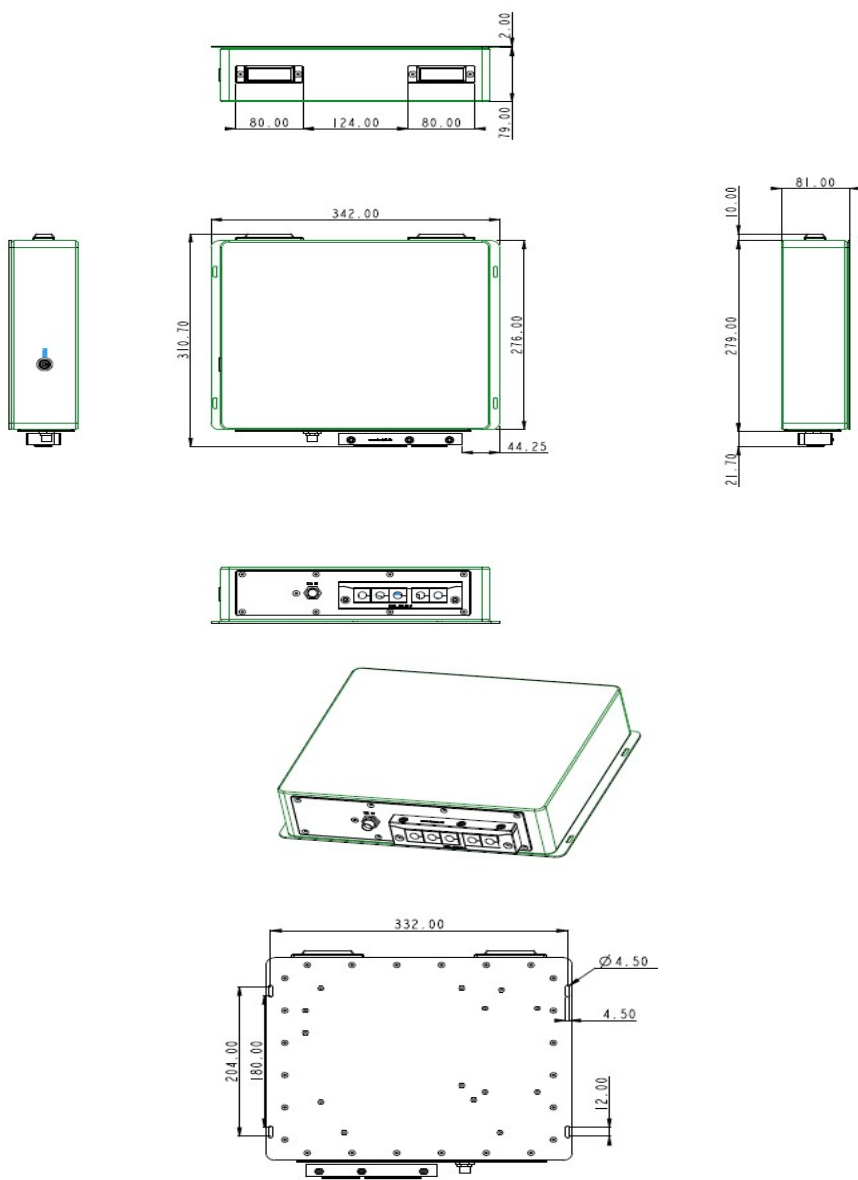
Notice:

The installation is only to be carried out by manufacturer trained and authorized personnel.

Dimension WTC-8J0 M12



Dimension WTC-8J0 Cable Gland



System View

View

M12



M12_back

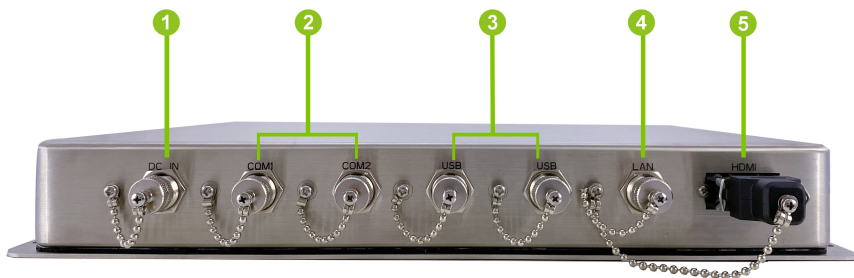


Cable Gland_back



I/O parts

M12



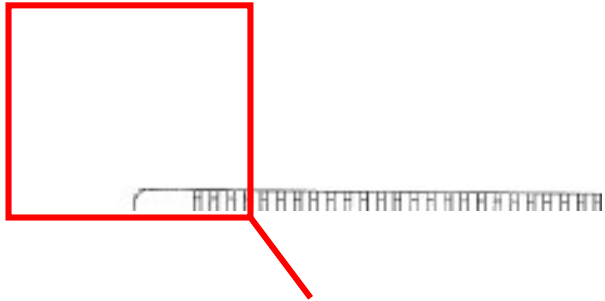
- 1 DC-in
- 2 COM x 2
- 3 USB2.0 x 2
- 4 LAN x 1
- 5 HDMI x 1

Cable Gland



- 1 COM x 2
- 2 HDMI x 1
- 3 DP x 1
- 4 LAN x 2
- 5 USB2.0 x 4
- 6 LINE-out
- 7 Mic-in

Disconnect Device



Unplug the power cord from the power adapter jack to disconnect the device.

Turn off the system:

Turning off WTC-8J0 properly is important for system reliability.

1. On the start menu, click "Shut down" and select "OK"

BIOS Setup

BIOS Introduction

The AMI BIOS (Basic Input / Output System) installed in your computer system's ROM supports Intel processors. The BIOS provides critical low-level support for a standard device such as disk drives, serial ports and parallel ports. It also adds virus and password protection as well as special support for detailed fine-tuning of the chipset controlling the entire system.

BIOS Setup

The AMI BIOS provides a Setup utility program for specifying the system configurations and settings. The BIOS ROM of the system stores the Setup utility. When you turn on the computer, the AMI BIOS is immediately activated. Pressing the key immediately allows you to enter the Setup utility. If you are a little bit late pressing the key, POST (Power On Self Test) will continue with its test routines, thus preventing you from invoking the Setup. If you still wish to enter Setup, restart the system by pressing the "Reset" button or simultaneously pressing the <Ctrl>, <Alt> and <Delete> keys. You can also restart by turning the system Off and back On again. The following message will appear on the screen:

Press to Enter Setup

In general, you press the arrow keys to highlight items, <Enter> to select, the <PgUp> and <PgDn> keys to change entries, <F1> for help and <Esc> to quit.

When you enter the Setup utility, the Main Menu screen will appear on the screen. The Main Menu allows you to select from various setup functions and exit choices.

Main

Aptio Setup - AMI		
Main Advanced H/W Monitor Security Boot Exit		
System Date	[Fri 11/25/2022]	Set the Date. Use Tab to switch between Date elements. Default Ranges: Year: 1998-9999 Months: 1-12 Days: Dependent on month Range of Years may vary.
System Time	[15:30:06]	
UEFI Version	: 636G0WTP8J6600 V1.00	↔: Select Screen ↑↓: Select Item Enter: Select +/-: Change Option F1: General Help F7: Discard Changes F9: Load UEFI Defaults F10: Save and Exit ESC: Exit
Processor Type	: Intel(R) Celeron(R) J6412 @ 2.00GHz	
Processor Speed	: 2000MHz	
Cache Size	: 4MB	
Total Memory	: 4GB with 512MB Shared Memory and 8MB GTT memory	
	Single-Channel Memory Mode	
DDR4_A1	: None	
DDR4_B1	: Transcend 4GB (DDR4-3200)	
LVDS Rom Version	: Default	
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System Date

Set the Date. Use Tab to switch between Date elements.

Default Ranges:

Year: 1998-9999

Months: 1-12

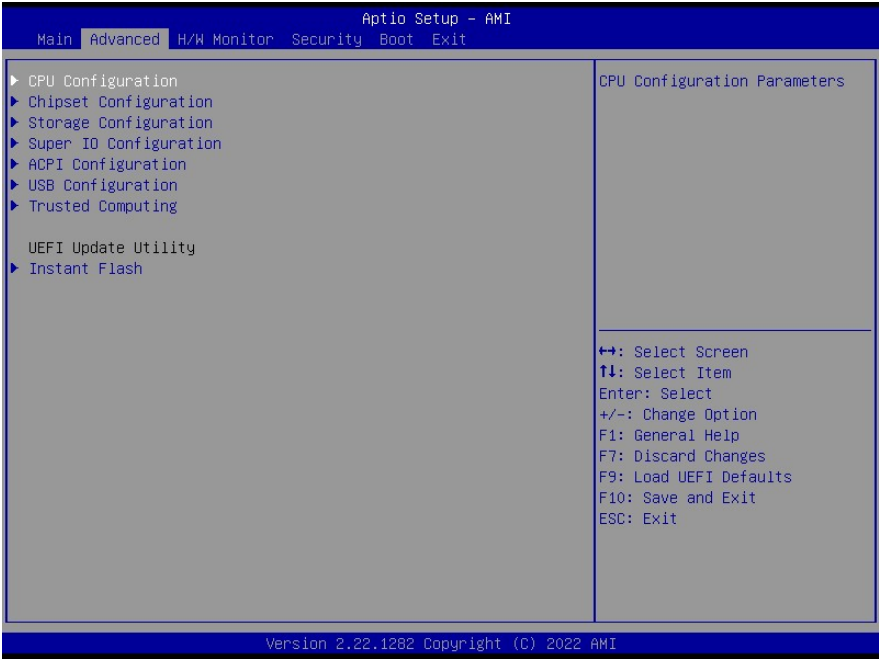
Days: Dependent on month

Range of Years may vary.

System Time

Set the Time. Use Tab to switch between Time elements.

Advanced



CPU Configuration

CPU Configuration parameters

Active Processor Cores

Select the number of cores to enable in each processor package.

CPU C States Support

Enable CPU C States Support for power saving. It is recommended to keep C3, C6 and C7 all enabled for better power saving.

Intel Virtualization Technology

Intel Virtualization Technology allows a platform to run multiple operating systems and applications in independent partitions, so that one computer system can function as multiple virtual systems.

Intel SpeedStep Technology

Allows more than two frequency ranges to be supported.

Intel Turbo Boost Technology

Intel Turbo Boost Technology enables the processor to run above its base operating frequency when the operating system requests the highest performance state.

CPU Thermal Throttling

Enable CPU internal thermal control mechanisms to keep the CPU from overheating.

Chipset Configuration

Configure Chipset settings

Above 4G Decoding

Enable/Disable above 4G MemoryMappedIO decoding

This is disabled automatically when Aperture Size is set to 2048MB.

VT-d

VT-d Capability

PCIe1 Link Speed

Configure PCIe Slot Link Speed.

Share Memory

Configure the size of memory that is allocated to the integrated graphics processor when the system boots up.

Render Standby

Check to enable render standby support.

Active LVDS

Enable: Enable the LVDS

Disable: Disable the LVDS

Panel Type Selection

Select Panel Type

Onboard LAN1

Enable or disable the onboard LAN1 network interface controller.

Onboard LAN2

Enable or disable the onboard LAN2 network interface controller.

Onboard HD Audio

Enable/disable onboard HD audio.

Restore on AC/Power Loss

Select the power state after a power failure. If [Power Off] is selected, the power will remain off when the power recovers. If [Power On] is selected, the system will start to boot up when the power recovers.

Storage Configuration

Configure Storage devices.

SATA Controllers(s)

Enables/disable the SATA controllers.

SATA Mode Selection

AHCI: Supports new features that improve performance.
Intel RST Premium(RAID):
Combine multiple disk drives into a logical unit.
Please press <CTRL - I> to enter RAID ROM during UEFI POST process.

SATA Aggressive Link Power Management

SATA Aggressive Link Power Management allows SATA devices to enter a low power state during periods of inactivity to save power. It is only supported by AHCI mode.

Hard Disk S.M.A.R.T

S.M.A.R.T stands for self-Monitoring, Analysis, and Reporting Technology, It is a monitoring system for computer hard disk drives to detect and report on various indicators of reliability.

SATA3_1:

M2M_1/SATA3_2:

Super IO Configuration

Configure Super IO Settings.

COM1

Enable or Disable COM1 IO=3F8h; IRQ=4;

COM2

Enable or Disable COM2 IO=2F8h; IRQ=3;

Type Select

Set COM TYPE.

COM3

Enable or Disable COM3 IO=3E8h; IRQ=7;

Type Select

Set COM TYPE.

COM4

Enable or Disable COM4 IO=2E8h; IRQ=7;

Type Select

Set COM TYPE.

WDT Timeout Reset

Enable/Disable Watch Dog Timer timeout to reset system.

ACPI Configuration

Configure ACPI Settings.

Suspend to RAM

It is recommended to select auto for ACPI S3 power saving.

PCIe Devices Power On

Allow the system to be waked up by a PCIe device and enable wake on LAN.

RTC Alarm Power On

Allow the system to be waked up by the real time clock alarm. Set it to By OS to let it be handled by your operating system.

USB Configuration

Configure the USB support.

USB Power Control

Always enabled: Enable USB power in S0/S3/S4/S5, Default setting: Enable USB power in S0/S3, disable USB power in S4/S5.

M.2 Key_B USB Function

Enable/Disable M.2 Key_B USB Function

Trusted Computing

Trusted Computing Settings.

Security Device Support

Enables or Disables BIOS support for security device. O.S. will not show Security Device. TCG EFI protocol and INT1A interface will not be available

SHA256 PCR Bank

Enable or Disable SHA256 PCR Bank

SHA384 PCR Bank

Enable or Disable SHA384 PCR Bank

SM3_256 PCR Bank

Enable or Disable SM3_256 PCR Bank

Pending operation

Schedule an Operation for the Security Device. NOTE: Your Computer will reboot during restart in order to change State of Security Device.

Platform Hierarchy

Enable or Disable Platform Hierarchy

Storage Hierarchy

Enable or Disable Storage Hierarchy

Endorsement Hierarchy

Enable or Disable Endorsement Hierarchy

TPM 2.0 UEFI Spec Version

Select the TCG2 Spec Version Support, TCG_1_2: the Compatible mode for Win8/Win10, TCG_2: Support new TCG2 protocol and event format for Win10 or later

Physical Presence Spec Version

Select to Tell O.S. to support PPI Spec Version 1.2 or 1.3. Note some HCK tests might not support 1.3.

TPM 2.0 InterfaceType

Select the Communication Interface to TPM 2.0 Device.

Device Select

TPM 1.2 will restrict support to TPM 1.2 devices, TPM 2.0 will restrict support to TPM 2.0 devices, Auto will support both with the default set to TPM 2.0 devices if not found, TPM 1.2 devices will be enumerated

Instant Flash

Save UEFI files in your USB storage device and run Instant Flash to update your UEFI. Please note that your USB storage device must be FAT32/16/12 file system.

H/W Monitor

Aptio Setup - AMI

Main Advanced **H/W Monitor** Security Boot Exit

<p>Hardware Health Event Monitoring</p> <p>CPU Temperature : +37.5 °C M/B Temperature : +36.0 °C</p> <p>CPU_FAN1 Speed : 5844 RPM CHA_FAN1 Speed : N/A</p> <p>+3V : +3.344 V +3VSB : +3.344 V VBAT : +3.024 V +5V : +5.136 V VDCORE : +1.664 V VDCM : +1.248 V DC_IN : +19.000 V</p> <p>CPU_FAN1 Setting [Full On] CHA_FAN1 Setting [Full On] Case Open Feature [Disabled]</p>	<p>Quiet Fan Function Control</p> <p>↔: Select Screen ↑↓: Select Item Enter: Select +/-: Change Option F1: General Help F7: Discard Changes F9: Load UEFI Defaults F10: Save and Exit ESC: Exit</p>
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CPU_FAN1 Setting

Quiet Fan Function Control

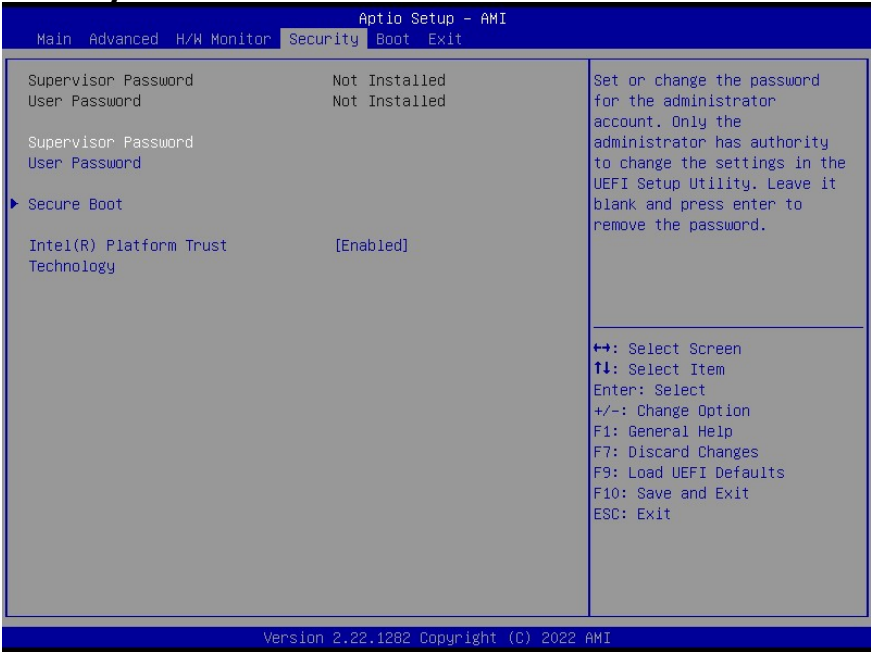
CHA_FAN1 Setting

Quiet Fan Function Control

Case Open Feature

Enable or disable the feature of Case Open.

Security



Supervisor Password

Set or change the password for the administrator account. Only the administrator has authority to change the settings in the UEFI setup Utility. Leave it blank and press enter to remove the password

User Password

Set or change the password for the user account. Users are unable to change the settings in the UEFI Setup Utility. Leave it blank and press enter to remove the password.

Secure Boot

Secure Boot configuration

Secure Boot

Secure Boot feature is Active if Secure Boot is Enabled, Platform Key(PK) is enrolled and the System is in User mode. The mode change requires platform reset

Secure Boot Mode

Secure Boot mode options: Standard or Custom. In Custom mode, Secure Boot Policy variables can be configured by a

physically present user without full authentication

Install default Secure Boot keys

Please install default secure boot keys if it's the first time you use secure boot.

Clear Secure Boot keys

Force System to Setup Mode - clear all Secure Boot Variables. Change takes effect after reboot

Key Management

Enables expert users to modify Secure Boot Policy variables without full authentication

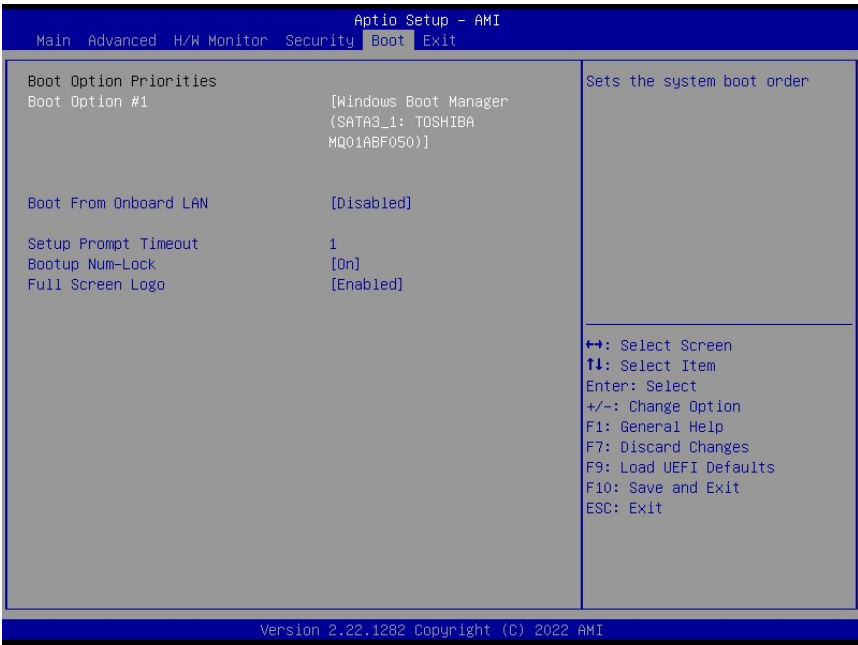
Intel(R) Platform Trust Technology

Enabled/Disabled Intel PTT function,

Enabled: Enable Intel PTT in ME,

Disabled: Disable Intel PTT in ME, Use discrete TPM Module.

Boot



Boot Option #1

Sets the system boot order

Boot Option #2

Sets the system boot order

Boot Option #3

Sets the system boot order

Boot Option #4

Sets the system boot order

Boot From Onboard LAN

Boot From Onboard LAN

Setup Prompt Timeout

Configure the number of seconds to wait for the UEFI setup utility.

Bootup Num-Lock

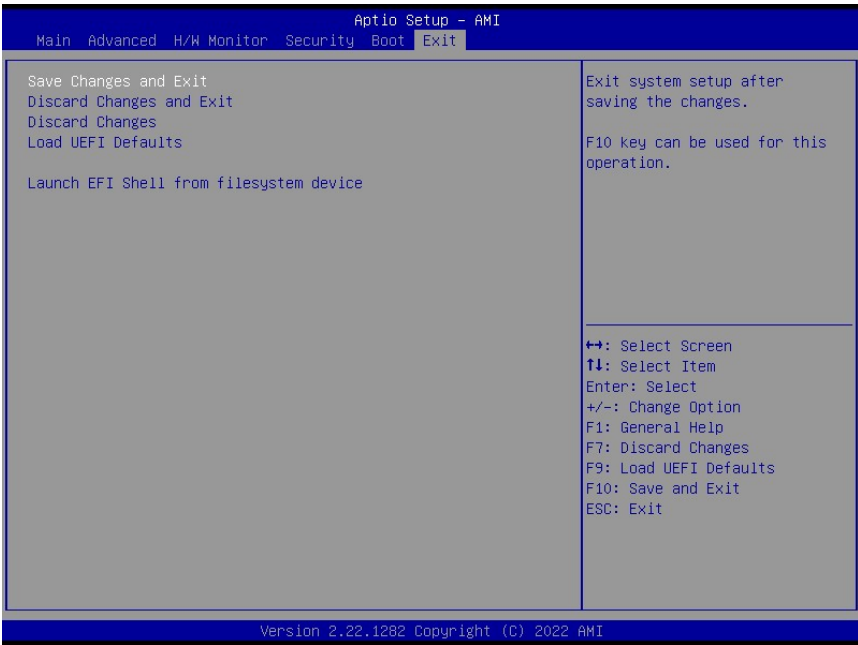
Select whether Num Lock should be turned on or off when the
WTC-8J0 User's manual

system boots up.

Full Screen Logo

Enable to display the boot logo or disable to show normal POST messages

Exit



Save Changes and Exit

Exit system setup after saving the changes.
F10 key can be used for this operation.

Discard Changes and Exit

Exit system setup without saving any changes.
ESC key can be used for this operation.

Discard Changes

Discard Changes done so far to any of the setup options.
F7 key can be used for this operation.

Load UEFI Defaults

Load UEFI Default values for all the setup questions.
F9 key can be used for this operation.

Launch EFI Shell from filesystem device

Copy shellx64.efi to the root directory to launch EFI Shell.

Appendix

A. Jumper settings and Connectors

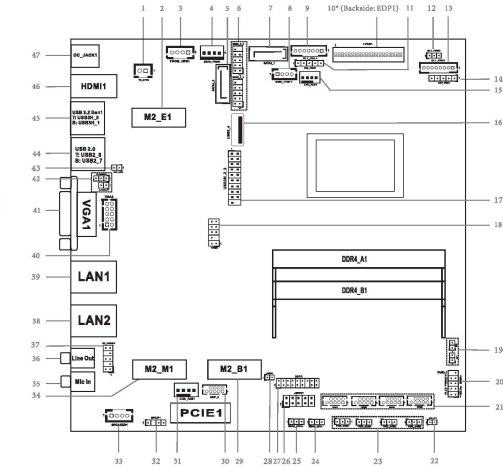
Jumpers and Headers Setting Guide

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Revision History

Doc	Description
July 23, 2021	First Release



1 : 2-pin UPS Module Power Input Connector

Pin1: GND
Pin2: DC Input



2 : M.2 Key-E Socket (M2_E1)

Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
1	NC	11	NC	21	NC	31	NC	41	NC
2	NC	12	NC	22	NC	32	NC	42	NC
3	NC	13	NC	23	NC	33	NC	43	NC
4	NC	14	NC	24	NC	34	NC	44	NC
5	NC	15	NC	25	NC	35	NC	45	NC
6	NC	16	NC	26	NC	36	NC	46	NC
7	NC	17	NC	27	NC	37	NC	47	NC
8	NC	18	NC	28	NC	38	NC	48	NC
9	NC	19	NC	29	NC	39	NC	49	NC
10	NC	20	NC	30	NC	40	NC	50	NC
11	NC	21	NC	31	NC	41	NC	51	NC
12	NC	22	NC	32	NC	42	NC	52	NC
13	NC	23	NC	33	NC	43	NC	53	NC
14	NC	24	NC	34	NC	44	NC	54	NC
15	NC	25	NC	35	NC	45	NC	55	NC
16	NC	26	NC	36	NC	46	NC	56	NC
17	NC	27	NC	37	NC	47	NC	57	NC
18	NC	28	NC	38	NC	48	NC	58	NC
19	NC	29	NC	39	NC	49	NC	59	NC
20	NC	30	NC	40	NC	50	NC	60	NC
21	NC	31	NC	41	NC	51	NC	61	NC
22	NC	32	NC	42	NC	52	NC	62	NC
23	NC	33	NC	43	NC	53	NC	63	NC
24	NC	34	NC	44	NC	54	NC	64	NC
25	NC	35	NC	45	NC	55	NC	65	NC
26	NC	36	NC	46	NC	56	NC	66	NC
27	NC	37	NC	47	NC	57	NC	67	NC
28	NC	38	NC	48	NC	58	NC	68	NC
29	NC	39	NC	49	NC	59	NC	69	NC
30	NC	40	NC	50	NC	60	NC	70	NC
31	NC	41	NC	51	NC	61	NC	71	NC
32	NC	42	NC	52	NC	62	NC	72	NC
33	NC	43	NC	53	NC	63	NC	73	NC
34	NC	44	NC	54	NC	64	NC	74	NC
35	NC	45	NC	55	NC	65	NC	75	NC
36	NC	46	NC	56	NC	66	NC	76	NC
37	NC	47	NC	57	NC	67	NC	77	NC
38	NC	48	NC	58	NC	68	NC	78	NC
39	NC	49	NC	59	NC	69	NC	79	NC
40	NC	50	NC	60	NC	70	NC	80	NC
41	NC	51	NC	61	NC	71	NC	81	NC
42	NC	52	NC	62	NC	72	NC	82	NC
43	NC	53	NC	63	NC	73	NC	83	NC
44	NC	54	NC	64	NC	74	NC	84	NC
45	NC	55	NC	65	NC	75	NC	85	NC
46	NC	56	NC	66	NC	76	NC	86	NC
47	NC	57	NC	67	NC	77	NC	87	NC
48	NC	58	NC	68	NC	78	NC	88	NC
49	NC	59	NC	69	NC	79	NC	89	NC
50	NC	60	NC	70	NC	80	NC	90	NC
51	NC	61	NC	71	NC	81	NC	91	NC
52	NC	62	NC	72	NC	82	NC	92	NC
53	NC	63	NC	73	NC	83	NC	93	NC
54	NC	64	NC	74	NC	84	NC	94	NC
55	NC	65	NC	75	NC	85	NC	95	NC
56	NC	66	NC	76	NC	86	NC	96	NC
57	NC	67	NC	77	NC	87	NC	97	NC
58	NC	68	NC	78	NC	88	NC	98	NC
59	NC	69	NC	79	NC	89	NC	99	NC
60	NC	70	NC	80	NC	90	NC	100	NC

3 : 4-pin DC-in PWR Connector (Input +12V

~+28V) & UPS Module Power Output Connector

Pin1 and Pin4: GND
Pin2 and Pin3: DC Input



4 : SATA Power Output Connector



5 : SATA3 Connector (SATA3_2)

6 : USB2.0 Connectors (USB2_2_3, USB2_5_6)



7 : SATA3 Connector (SATA3_1)

Pin	Signal Name	Pin	Signal Name	Pin	Signal Name	Pin	Signal Name
1	SPP0	2	SMB-CLN	3	SMB-CATN	4	GND

9 : Backlight Volume Control (BLT_VOL1)

Pin	Signal Name
1	GPIO_VOL_UP
2	GPIO_VOL_DW
3	PWRON
4	BRIGHTNESS_UP
5	BRIGHTNESS_DW
6	GND
7	GND

13 : Backlight Power Connector (BLT_PWR1)

Pin	Signal Name
1	GND
2	GND
3	CON_LBKLT_CTL
4	CON_LBKLT_EN
5	LCD_BLT_VCC
6	LCD_BLT_VCC
7	eDP_BKLTCTL_R
8	eDP_BKLTEN

10 : LVDS Panel Connector

Pin	Signal Name	Pin	Signal Name	Pin	Signal Name	Pin	Signal Name	Pin	Signal Name
1	LVDS0_0	11	LVDS0_10	21	LVDS0_20	31	LVDS0_30	41	LVDS0_40
2	LVDS0_1	12	LVDS0_11	22	LVDS0_21	32	LVDS0_31	42	LVDS0_41
3	LVDS0_2	13	LVDS0_12	23	LVDS0_22	33	LVDS0_32	43	LVDS0_42
4	LVDS0_3	14	LVDS0_13	24	LVDS0_23	34	LVDS0_33	44	LVDS0_43
5	LVDS0_4	15	LVDS0_14	25	LVDS0_24	35	LVDS0_34	45	LVDS0_44
6	LVDS0_5	16	LVDS0_15	26	LVDS0_25	36	LVDS0_35	46	LVDS0_45
7	LVDS0_6	17	LVDS0_16	27	LVDS0_26	37	LVDS0_36	47	LVDS0_46
8	LVDS0_7	18	LVDS0_17	28	LVDS0_27	38	LVDS0_37	48	LVDS0_47
9	LVDS0_8	19	LVDS0_18	29	LVDS0_28	39	LVDS0_38	49	LVDS0_48
10	LVDS0_9	20	LVDS0_19	30	LVDS0_29	40	LVDS0_39	50	LVDS0_49
11	LVDS0_10	31	LVDS0_20	41	LVDS0_30	51	LVDS0_40	61	LVDS0_50
12	LVDS0_11	32	LVDS0_21	42	LVDS0_31	52	LVDS0_41	62	LVDS0_51
13	LVDS0_12	33	LVDS0_22	43	LVDS0_32	53	LVDS0_42	63	LVDS0_52
14	LVDS0_13	34	LVDS0_23	44	LVDS0_33	54	LVDS0_43	64	LVDS0_53
15	LVDS0_14	35	LVDS0_24	45	LVDS0_34	55	LVDS0_44	65	LVDS0_54
16	LVDS0_15	36	LVDS0_25	46	LVDS0_35	56	LVDS0_45	66	LVDS0_55
17	LVDS0_16	37	LVDS0_26	47	LVDS0_36	57	LVDS0_46	67	LVDS0_56
18	LVDS0_17	38	LVDS0_27	48	LVDS0_37	58	LVDS0_47	68	LVDS0_57
19	LVDS0_18	39	LVDS0_28	49	LVDS0_38	59	LVDS0_48	69	LVDS0_58
20	LVDS0_19	40	LVDS0_29	50	LVDS0_39	60	LVDS0_49	70	LVDS0_59
21	LVDS0_20	41	LVDS0_30	51	LVDS0_40	61	LVDS0_50	71	LVDS0_60
22	LVDS0_21	42	LVDS0_31	52	LVDS0_41	62	LVDS0_51	72	LVDS0_61
23	LVDS0_22	43	LVDS0_32	53	LVDS0_42	63	LVDS0_52	73	LVDS0_62
24	LVDS0_23	44	LVDS0_33	54	LVDS0_43	64	LVDS0_53	74	LVDS0_63
25	LVDS0_24	45	LVDS0_34	55	LVDS0_44	65	LVDS0_54	75	LVDS0_64
26	LVDS0_25	46	LVDS0_35	56	LVDS0_45	66	LVDS0_55	76	LVDS0_65
27	LVDS0_26	47	LVDS0_36	57	LVDS0_46	67	LVDS0_56	77	LVDS0_66
28	LVDS0_27	48	LVDS0_37	58	LVDS0_47	68	LVDS0_57	78	LVDS0_67
29	LVDS0_28	49	LVDS0_38	59	LVDS0_48	69	LVDS0_58	79	LVDS0_68
30	LVDS0_29	50	LVDS0_39	60	LVDS0_49	70	LVDS0_59	80	LVDS0_69
31	LVDS0_30	51	LVDS0_40	61	LVDS0_50	71	LVDS0_60	81	LVDS0_70
32	LVDS0_31	52	LVDS0_41	62	LVDS0_51	72	LVDS0_61	82	LVDS0_71
33	LVDS0_32	53	LVDS0_42	63	LVDS0_52	73	LVDS0_62	83	LVDS0_72
34	LVDS0_33	54	LVDS0_43	64	LVDS0_53	74	LVDS0_63	84	LVDS0_73
35	LVDS0_34	55	LVDS0_44	65	LVDS0_54	75	LVDS0_64	85	LVDS0_74
36	LVDS0_35	56	LVDS0_45	66	LVDS0_55	76	LVDS0_65	86	LVDS0_75
37	LVDS0_36	57	LVDS0_46	67	LVDS0_56	77	LVDS0_66	87	LVDS0_76
38	LVDS0_37	58	LVDS0_47	68	LVDS0_57	78	LVDS0_67	88	LVDS0_77
39	LVDS0_38	59	LVDS0_48	69	LVDS0_58	79	LVDS0_68	89	LVDS0_78
40	LVDS0_39	60	LVDS0_49	70	LVDS0_59	80	LVDS0_69	90	LVDS0_79
41	LVDS0_40	61	LVDS0_50	71	LVDS0_60	81	LVDS0_70	91	LVDS0_80
42	LVDS0_41	62	LVDS0_51	72	LVDS0_61	82	LVDS0_71	92	LVDS0_81
43	LVDS0_42	63	LVDS0_52	73	LVDS0_62	83	LVDS0_72	93	LVDS0_82
44	LVDS0_43	64	LVDS0_53	74	LVDS0_63	84	LVDS0_73	94	LVDS0_83
45	LVDS0_44	65	LVDS0_54	75	LVDS0_64	85	LVDS0_74	95	LVDS0_84
46	LVDS0_45	66	LVDS0_55	76	LVDS0_65	86	LVDS0_75	96	LVDS0_85
47	LVDS0_46	67	LVDS0_56	77	LVDS0_66	87	LVDS0_76	97	LVDS0_86
48	LVDS0_47	68	LVDS0_57	78	LVDS0_67	88	LVDS0_77	98	LVDS0_87
49	LVDS0_48	69	LVDS0_58	79	LVDS0_68	89	LVDS0_78	99	LVDS0_88
50	LVDS0_49	70	LVDS0_59	80	LVDS0_69	90	LVDS0_79	100	LVDS0_89

* eDP Connector (on the Backside of PCB)



14 : eDP and LVDS Backlight Power Select (LCD_BLT_VCC) (BKT_PWR1)

1-2: LCD_BLT_VCC: +5V
2-3: LCD_BLT_VCC: +12V
4-5: LCD_BLT_VCC: DC Input

15 : 4-Pin CPU FAN Connector (+12V)



16 : USB2.0 Connector (USB2_4)

17 : USB3.2 Gen1 Connector (USB3H_2_3)

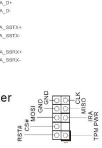


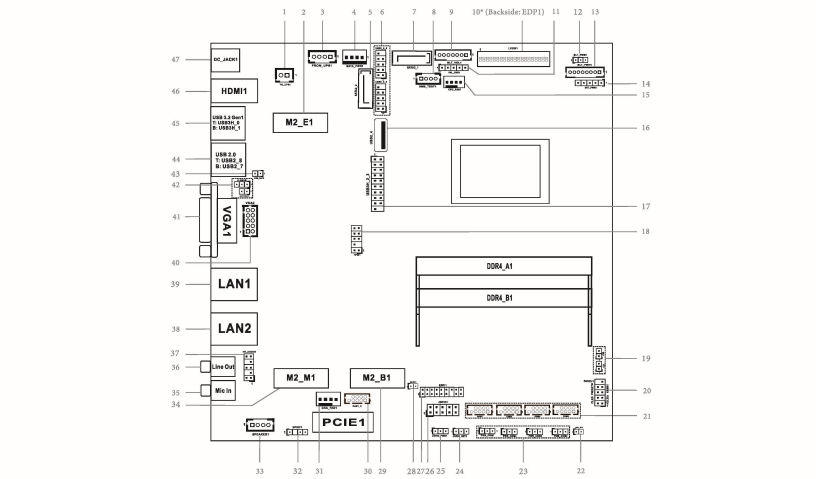
11 : eDP and LVDS Panel Power Select (LCD_VCC) (PNL_PWR1)

1-2: LCD_VCC: +3V
2-3: LCD_VCC: +5V
4-5: LCD_VCC: +12V



18 : SPI TPM Header





19 : Chassis Intrusion Headers
 C11:
 Close: Active Case Open
 Open: Normal
 C12:
 Close: Normal
 Open: Active Case Open

20 : System Panel Header

21 : Internal COM Port Headers
 COM1, 2 (RS232)
 COM3, 4 (RS232/422/485)

Pin	Signal Name	Pin	Signal Name	Pin	Signal Name	Pin	Signal Name
10	N/A	8	CCTSR	6	DDSR4	4	DDTR1
9	PWR	7	RRTSR	5	GND	3	TTX0
							DDCOW

* This motherboard supports RS232/422/485 on COM3, 4 ports. Please refer to below table for the pin definition. In addition, COM3, 4 ports (RS232/422/485) can be adjusted in BIOS setup utility > Advanced Screen > Super IO Configuration. You may refer to our user manual for details.

COM3, 4 Port Pin Definition

Pin	RS232	RS422	RS485
1	DCD	TX-	RTX-
2	RXD	TX+	RTX+
3	TXD	RTX-	N/A
4	DTR	RTX-	N/A
5	GND	GND	GND
6	DSR	N/A	N/A
7	RTS	N/A	N/A
8	CTS	N/A	N/A
9	PWR	PWR	PWR
10	N/A	N/A	N/A

22 : SIO_AT1
 Open : ATX Mode
 Short : AT Mode

23 : COM Port PWR Setting Jumpers
 PWR_COM1 (For COM Port1)
 PWR_COM2 (For COM Port2)
 PWR_COM3 (For COM Port3)
 PWR_COM4 (For COM Port4)
 1-2 : +5V
 2-3 : +12V

24 : Digital Input / Output Default Value Setting (JGPIO_SET1)
 1-2: Pull-High
 2-3: Pull-Low

25 : Digital Input / Output Power Select (JGPIO_PWR) (JGPIO_PWR1)
 1-2: +12V
 2-3: +5V

26 : Digital Input/Output Pin Header (JGPIO1)



Pin	Signal Name	Pin	Signal Name	Pin	Signal Name	Pin	Signal Name
2	SOC_DET	4	SOC_DET	8	DOC_DET	9	SOC_DET
1	SIO_GPA	3	SIO_GPO	5	SIO_GPA	7	SIO_GPO
							JGPIO_PWR

27 : ESPI Header



Pin	Signal Name	Pin	Signal Name	Pin	Signal Name	Pin	Signal Name
1	GND	2	ESPI_CLK	3	ESPI_DQ0	4	ESPI_DQ1
5	GND	6	ESPI_DQ2	7	ESPI_DQ3	8	ESPI_DQ4
9	GND	10	ESPI_DQ5	11	ESPI_DQ6	12	ESPI_DQ7
13	GND	14	ESPI_DQ8	15	ESPI_DQ9	16	ESPI_DQ10
17	GND	18	ESPI_DQ11	19	ESPI_DQ12	20	ESPI_DQ13
21	GND	22	ESPI_DQ14	23	ESPI_DQ15	24	ESPI_DQ16
25	GND	26	ESPI_DQ17	27	ESPI_DQ18	28	ESPI_DQ19
29	GND	30	ESPI_DQ20	31	ESPI_DQ21	32	ESPI_DQ22
33	GND	34	ESPI_DQ23	35	ESPI_DQ24	36	ESPI_DQ25
37	GND	38	ESPI_DQ26	39	ESPI_DQ27	40	ESPI_DQ28
41	GND	42	ESPI_DQ29	43	ESPI_DQ30	44	ESPI_DQ31
45	GND	46	ESPI_DQ32	47	ESPI_DQ33	48	ESPI_DQ34
49	GND	50	ESPI_DQ35	51	ESPI_DQ36	52	ESPI_DQ37
53	GND	54	ESPI_DQ38	55	ESPI_DQ39	56	ESPI_DQ40
57	GND	58	ESPI_DQ41	59	ESPI_DQ42	60	ESPI_DQ43
61	GND	62	ESPI_DQ44	63	ESPI_DQ45	64	ESPI_DQ46
65	GND	66	ESPI_DQ47	67	ESPI_DQ48	68	ESPI_DQ49
71	GND	72	ESPI_DQ50	73	ESPI_DQ51	74	ESPI_DQ52
75	GND	76	ESPI_DQ53	77	ESPI_DQ54	78	ESPI_DQ55
81	GND	82	ESPI_DQ56	83	ESPI_DQ57	84	ESPI_DQ58
85	GND	86	ESPI_DQ59	87	ESPI_DQ60	88	ESPI_DQ61
91	GND	92	ESPI_DQ62	93	ESPI_DQ63	94	ESPI_DQ64
95	GND	96	ESPI_DQ65	97	ESPI_DQ66	98	ESPI_DQ67
101	GND	102	ESPI_DQ68	103	ESPI_DQ69	104	ESPI_DQ70
105	GND	106	ESPI_DQ71	107	ESPI_DQ72	108	ESPI_DQ73
111	GND	112	ESPI_DQ74	113	ESPI_DQ75	114	ESPI_DQ76
115	GND	116	ESPI_DQ77	117	ESPI_DQ78	118	ESPI_DQ79
121	GND	122	ESPI_DQ80	123	ESPI_DQ81	124	ESPI_DQ82
125	GND	126	ESPI_DQ83	127	ESPI_DQ84	128	ESPI_DQ85
131	GND	132	ESPI_DQ86	133	ESPI_DQ87	134	ESPI_DQ88
135	GND	136	ESPI_DQ89	137	ESPI_DQ90	138	ESPI_DQ91
141	GND	142	ESPI_DQ92	143	ESPI_DQ93	144	ESPI_DQ94
145	GND	146	ESPI_DQ95	147	ESPI_DQ96	148	ESPI_DQ97
151	GND	152	ESPI_DQ98	153	ESPI_DQ99	154	ESPI_DQ100

28 : DACC Jumper (DACC1)
 Open: Normal
 Short: Auto Clear CMOS (Power Off)

29 : M.2 Key-B Socket (M2_B1)

Pin	Signal Name	Pin	Signal Name	Pin	Signal Name	Pin	Signal Name
1	GND	2	DATA0	3	DATA1	4	DATA2
5	GND	6	DATA3	7	DATA4	8	DATA5
9	GND	10	DATA6	11	DATA7	12	DATA8
13	GND	14	DATA9	15	DATA10	16	DATA11
17	GND	18	DATA12	19	DATA13	20	DATA14
21	GND	22	DATA15	23	DATA16	24	DATA17
25	GND	26	DATA18	27	DATA19	28	DATA20
29	GND	30	DATA21	31	DATA22	32	DATA23
33	GND	34	DATA24	35	DATA25	36	DATA26
37	GND	38	DATA27	39	DATA28	40	DATA29
41	GND	42	DATA30	43	DATA31	44	DATA32
45	GND	46	DATA33	47	DATA34	48	DATA35
49	GND	50	DATA36	51	DATA37	52	DATA38
53	GND	54	DATA39	55	DATA40	56	DATA41
57	GND	58	DATA42	59	DATA43	60	DATA44
61	GND	62	DATA45	63	DATA46	64	DATA47
65	GND	66	DATA48	67	DATA49	68	DATA50
69	GND	70	DATA51	71	DATA52	72	DATA53
73	GND	74	DATA54	75	DATA55	76	DATA56
77	GND	78	DATA57	79	DATA58	80	DATA59
81	GND	82	DATA60	83	DATA61	84	DATA62
85	GND	86	DATA63	87	DATA64	88	DATA65
89	GND	90	DATA66	91	DATA67	92	DATA68
93	GND	94	DATA69	95	DATA70	96	DATA71
97	GND	98	DATA72	99	DATA73	100	DATA74
101	GND	102	DATA75	103	DATA76	104	DATA77
105	GND	106	DATA78	107	DATA79	108	DATA80
111	GND	112	DATA81	113	DATA82	114	DATA83
115	GND	116	DATA84	117	DATA85	118	DATA86
119	GND	120	DATA87	121	DATA88	122	DATA89
123	GND	124	DATA90	125	DATA91	126	DATA92
127	GND	128	DATA93	129	DATA94	130	DATA95
131	GND	132	DATA96	133	DATA97	134	DATA98
135	GND	136	DATA99	137	DATA100	138	DATA101
139	GND	140	DATA102	141	DATA103	142	DATA104
143	GND	144	DATA105	145	DATA106	146	DATA107
147	GND	148	DATA108	149	DATA109	150	DATA110
151	GND	152	DATA111	153	DATA112	154	DATA113
155	GND	156	DATA114	157	DATA115	158	DATA116
159	GND	160	DATA117	161	DATA118	162	DATA119
163	GND	164	DATA120	165	DATA121	166	DATA122
167	GND	168	DATA123	169	DATA124	170	DATA125
171	GND	172	DATA126	173	DATA127	174	DATA128
175	GND	176	DATA129	177	DATA130	178	DATA131
179	GND	180	DATA132	181	DATA133	182	DATA134
183	GND	184	DATA135	185	DATA136	186	DATA137
187	GND	188	DATA138	189	DATA139	190	DATA140
191	GND	192	DATA141	193	DATA142	194	DATA143
195	GND	196	DATA144	197	DATA145	198	DATA146
199	GND	200	DATA147	201	DATA148	202	DATA149
203	GND	204	DATA150	205	DATA151	206	DATA152
207	GND	208	DATA153	209	DATA154	210	DATA155
211	GND	212	DATA156	213	DATA157	214	DATA158
215	GND	216	DATA159	217	DATA160	218	DATA161
219	GND	220	DATA162	221	DATA163	222	DATA164
223	GND	224	DATA165	225	DATA166	226	DATA167
227	GND	228	DATA168	229	DATA169	230	DATA170
231	GND	232	DATA171	233	DATA172	234	DATA173
235	GND	236	DATA174	237	DATA175	238	DATA176
239	GND	240	DATA177	241	DATA178	242	DATA179
243	GND	244	DATA180	245	DATA181	246	DATA182
247	GND	248	DATA183	249	DATA184	250	DATA185
251	GND	252	DATA186	253	DATA187	254	DATA188
255	GND	256	DATA189	257	DATA190	258	DATA191
259	GND	260	DATA192	261	DATA193	262	DATA194
263	GND	264	DATA195	265	DATA196	266	DATA197
267	GND	268	DATA198	269	DATA199	270	DATA200
271	GND	272	DATA201	273	DATA202	274	DATA203
275	GND	276	DATA204	277	DATA205	278	DATA206
279	GND	280	DATA207	281	DATA208	282	DATA209
283	GND	284	DATA210	285	DATA211	286	DATA212
287	GND	288	DATA213	289	DATA214	290	DATA215
291	GND	292	DATA216	293	DATA217	294	DATA218
295	GND	296	DATA219	297	DATA220	298	DATA221
299	GND	300	DATA222	301	DATA223	302	DATA224
303	GND	304	DATA225	305	DATA226	306	DATA227
307	GND	308	DATA228	309	DATA229	310	DATA230
311	GND	312	DATA231	313	DATA232	314	DATA233
315	GND	316	DATA234	317	DATA235	318	DATA236
319	GND	320	DATA237	321	DATA238	322	DATA239
323	GND	324	DATA240	325	DATA241	326	DATA242
327	GND	328	DATA243	329	DATA244	330	DATA245
331	GND	332	DATA246	333	DATA247	334	DATA248
335	GND	336	DATA249	337	DATA250	338	DATA251
339	GND	340	DATA252	341	DATA253	342	DATA254
343	GND	344	DATA255	345	DATA256	346	DATA257
347	GND	348	DATA258	349	DATA259	350	DATA260
351	GND	352	DATA261	353	DATA262	354	DATA263
355	GND	356	DATA264	357	DATA265	358	DATA266
359	GND	360	DATA267	361	DATA268	362	DATA269
363	GND	364	DATA270	365	DATA271	366	DATA272
367	GND	368	DATA273	369	DATA274	370	DATA275
371	GND						